

Claims

1. A method of performing handover control of a wireless mobile device, which is executed in a wireless network that has a base station control apparatus that controls switching of a wireless channel of the mobile station via a base station that relays wireless communication of the mobile station, comprising:

a deterioration speed calculation step of, according to a report made from the mobile station to the base station control apparatus and regarding a reception quality of a wireless channel that the mobile station is using, calculating the deterioration speed at which the level of the reception quality deteriorates; and

a condition determining step of, according to the deterioration speed, determining a condition on which the reception quality is to be reported and/or a condition on which handover is to be triggered.

2. The method of performing handover control of a wireless mobile device according to claim 1, comprising:

a periodical report instructing step of, when the level of the reception quality deteriorates at a speed that exceeds a prescribed deterioration speed, instructing the mobile station to periodically report the reception quality from the base station control apparatus;

a periodical report executing step of executing the periodic report from the mobile station to the base station control apparatus according to the instruction from the

base station control apparatus;

a level estimating step of, according to the reported reception quality level, the period, and the deterioration speed, estimating the level of the reception quality that will come after the passage of a one period of the periods;

a comparing step of comparing the level of the reception quality that has been estimated and the handover execution threshold value;

a handover execution instructing step of, according to the compared result, instructing the mobile station to execute handover from the base station control apparatus; and

a handover executing step of, according to the instruction to execute the handover, executing handover in the mobile station.

3. The method of performing handover control of a wireless mobile device according to claim 2, wherein the higher the deterioration speed is, the shorter the period of the report becomes.

4. The method of performing handover control of a wireless mobile device according to claim 2 or 3, wherein, in a case where the base station control apparatus has not received the report within the report period that has been designated, instructing the execution of the handover is performed from the base station control apparatus to the mobile station.

5. The method of performing handover control of a

wireless mobile device according to one of claims 1 to 4; comprising:

a threshold value setting step of, when the level of the reception quality deteriorates at a speed that is lower than a prescribed deterioration speed, instructing stepwise changing threshold values for performing the next reports from the base station control apparatus to the mobile station;

a reporting step of, when in the mobile station the level of the reception quality corresponding to the wireless channel of the mobile station has fallen below the threshold value, reporting in the mobile station;

a detecting step of detecting that the level of the reception quality that has been reported has arrived at the handover execution threshold value;

a handover execution instructing step of, according to the detected result, instructing the mobile station to execute handover from the base station control apparatus; and

a handover executing step of, according to the instruction to execute the handover, executing handover in the mobile station.

6. A base station control apparatus, which is adapted to control switching of the wireless channel of a mobile station via a base station that relays wireless communication of the mobile station, comprising:

deterioration speed calculation means that, according

to a report made from the mobile station and regarding a reception quality of a wireless channel that the mobile station is using, calculates the deterioration speed at which the level of the reception quality deteriorates; and

condition determining means that, according to the deterioration speed, determines a condition on which the reception quality is to be reported and/or a condition on which handover is to be triggered.

7. The base station control apparatus according to claim 6, comprising:

periodical report instructing means that, when the level of the reception quality deteriorates at a speed that exceeds a prescribed deterioration speed, instructs the mobile station to periodically report the reception quality;

level estimating means that, according to the reported reception quality level, the period, and the deterioration speed, estimates the level of the reception quality that will come after the passage of a one period of the periods; and

handover control means that, according to the estimated reception quality level, determines switching of the wireless channel of the mobile station.

8. The base station control apparatus according to claim 6, comprising threshold value setting means that, when the level of the reception quality deteriorates at a speed that is lower than a prescribed deterioration speed,

instructs stepwise changing threshold values for performing the next reports from the base station control apparatus to the mobile station.

9. A wireless mobile device, which is adapted to execute switching of a wireless channel corresponding thereto according to an instruction made from a base station control apparatus via a base station that relays the wireless communication, comprising:

wireless reception quality measuring means that measures the reception quality of the wireless channel that the wireless mobile station is using;

first reporting means that, when the level of the reception quality that has been measured has become lower than a threshold value that has been set beforehand or the threshold value instructed by the base station control apparatus to the wireless mobile device, reports to the base station control apparatus;

second reporting means that reports the reception quality that has been measured to the base station control apparatus in periods that the base station control apparatus instructs to the wireless mobile device; and

handover executing means that executes switching of the wireless channel according to the instruction from the base station control apparatus.